

Fig.1.

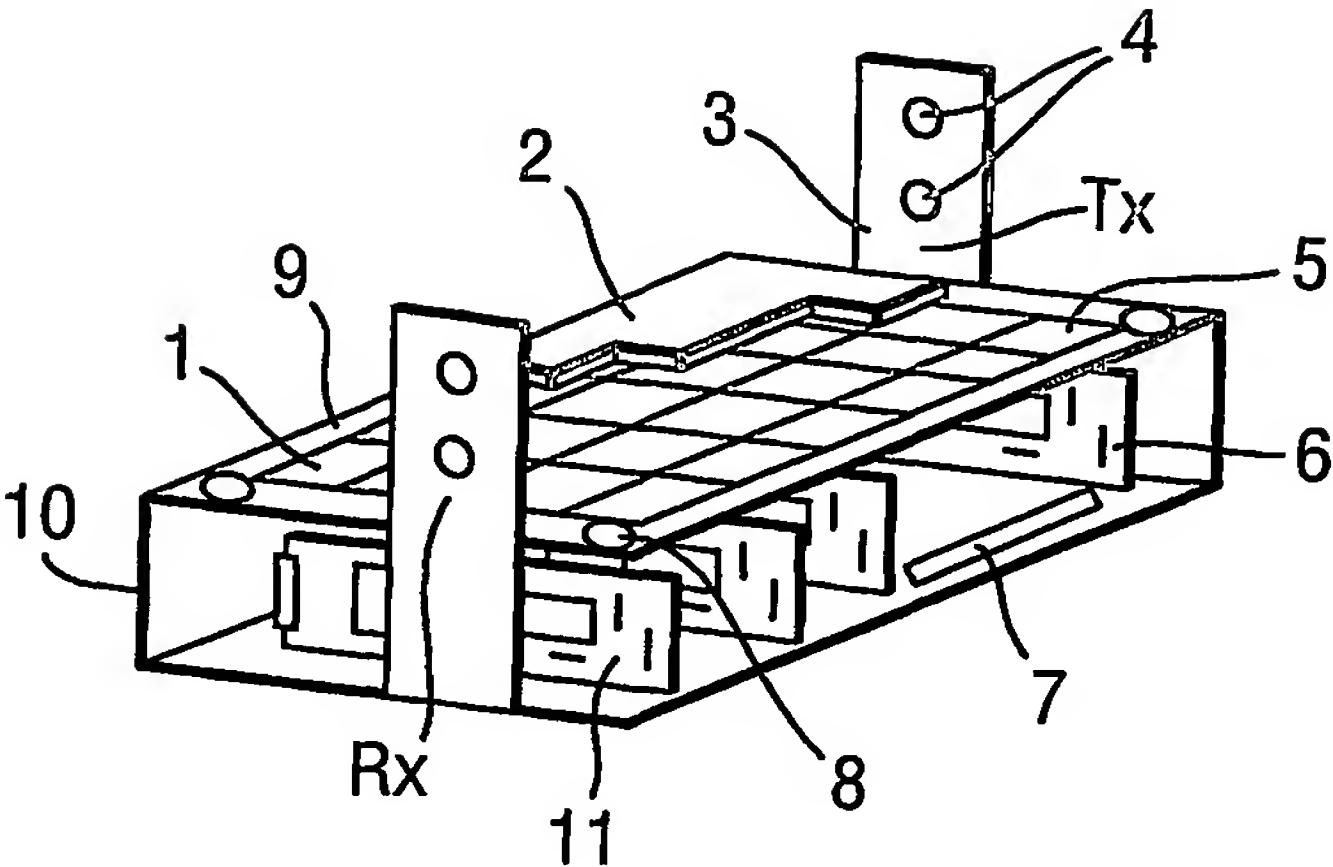


Fig.2.

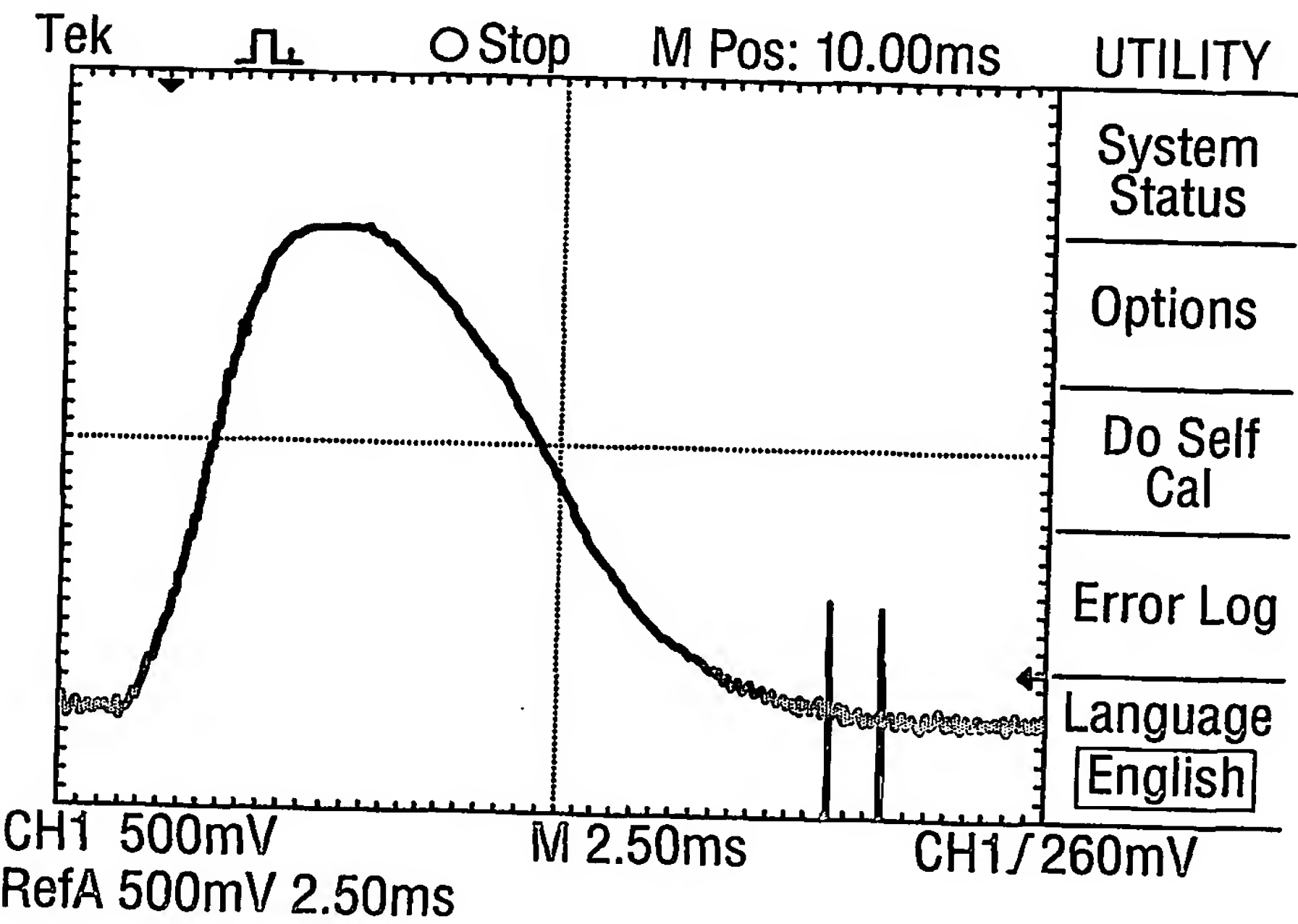
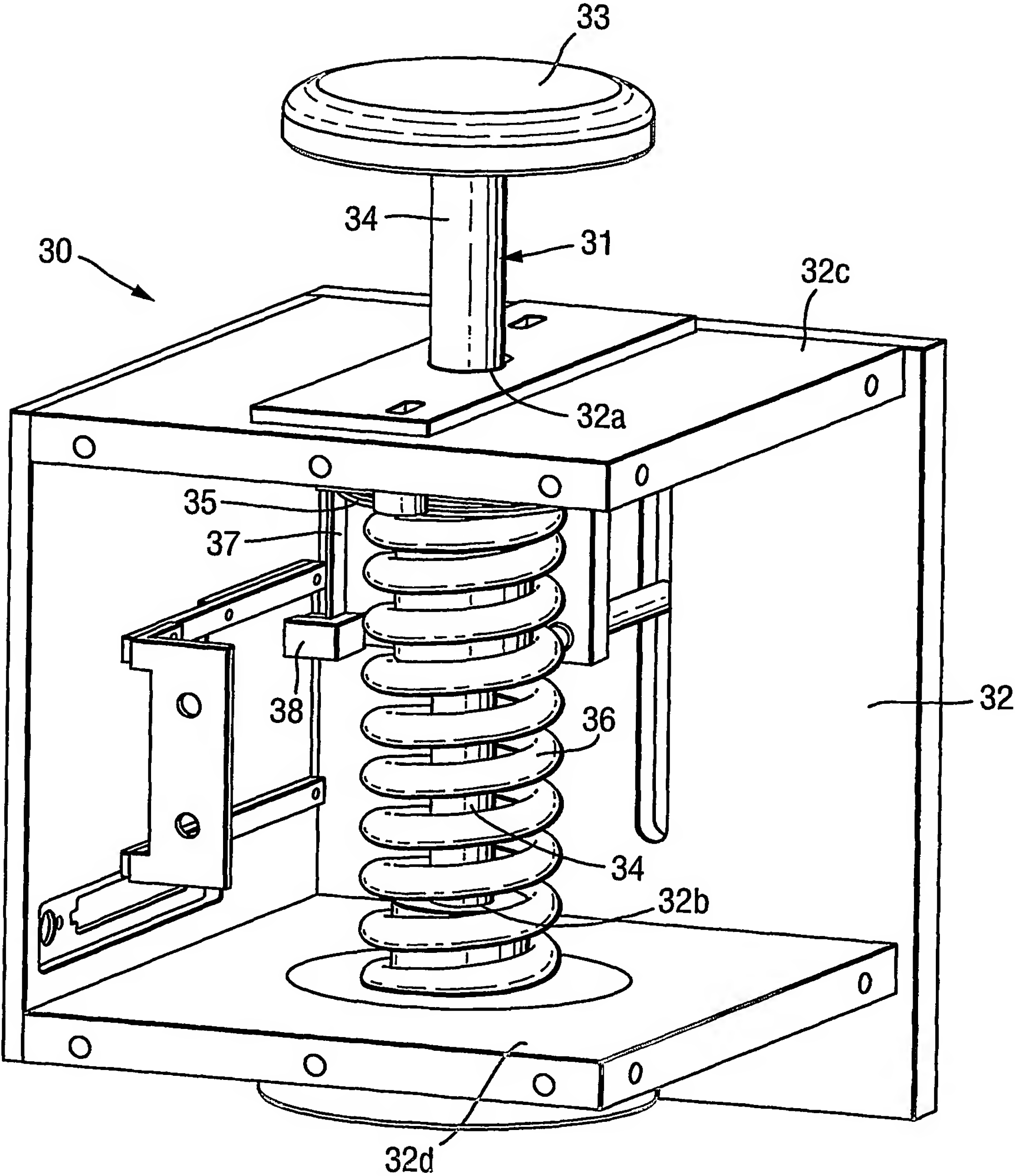
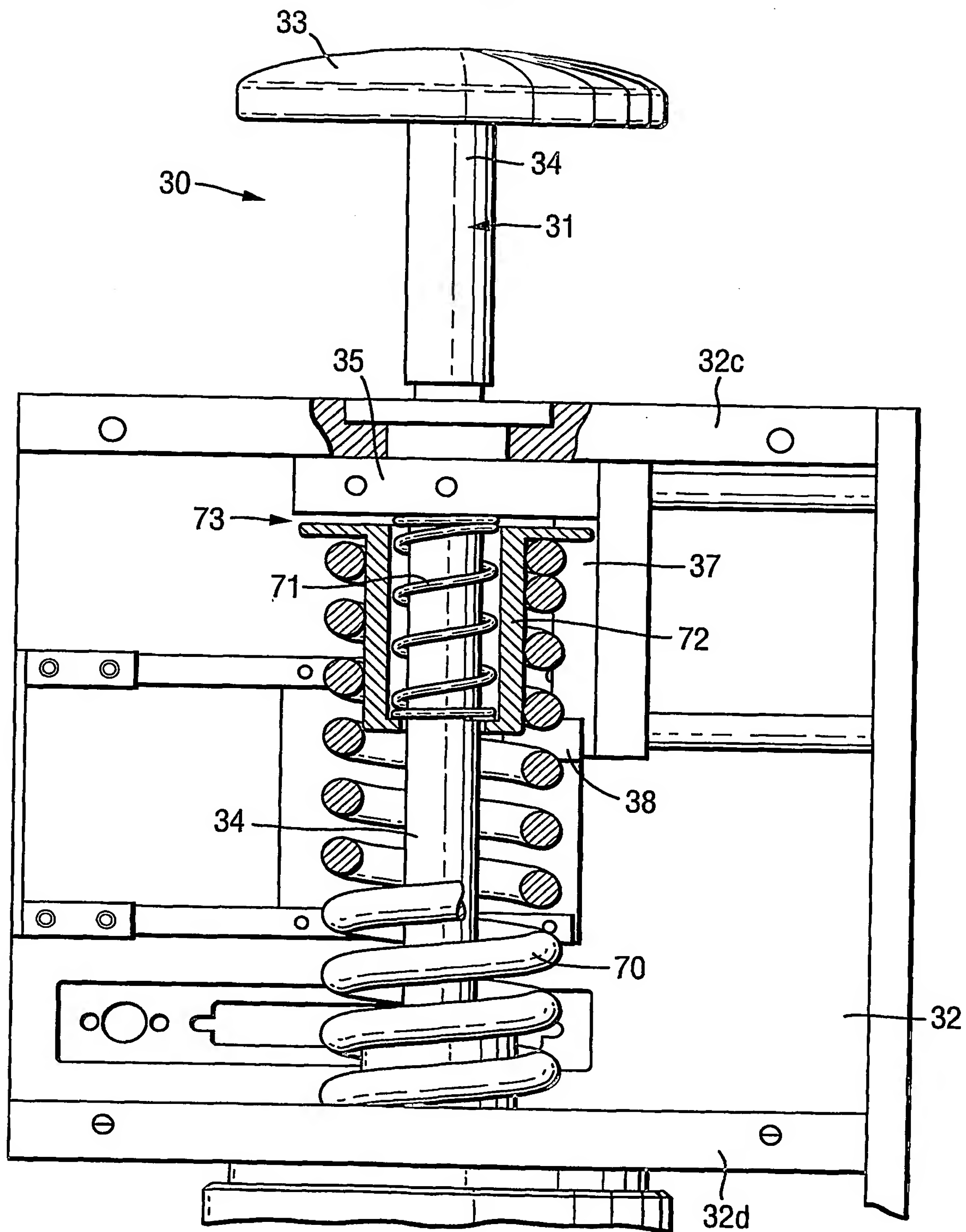


Fig.3.



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Fig.4.



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Fig. 5.

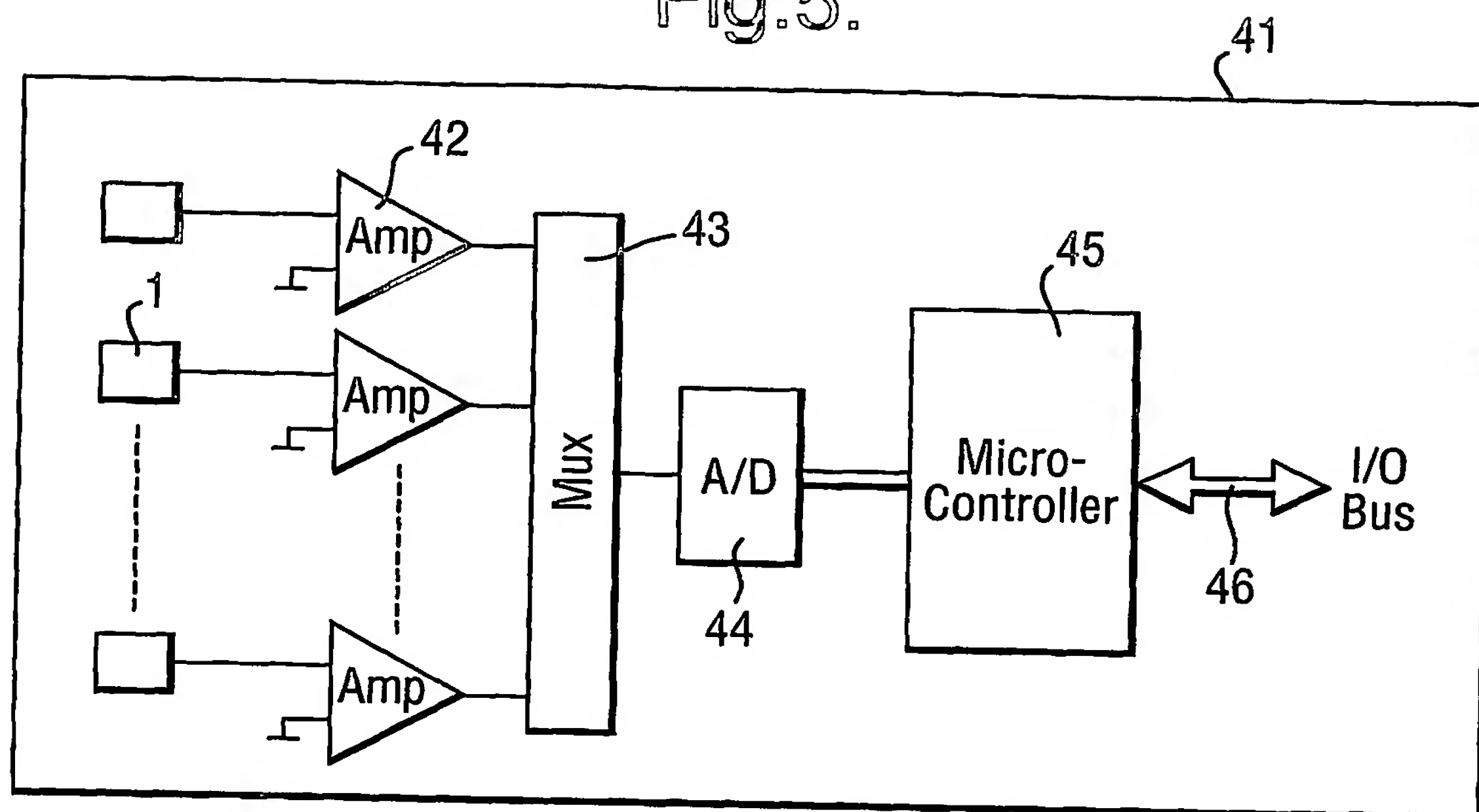


Fig. 6.

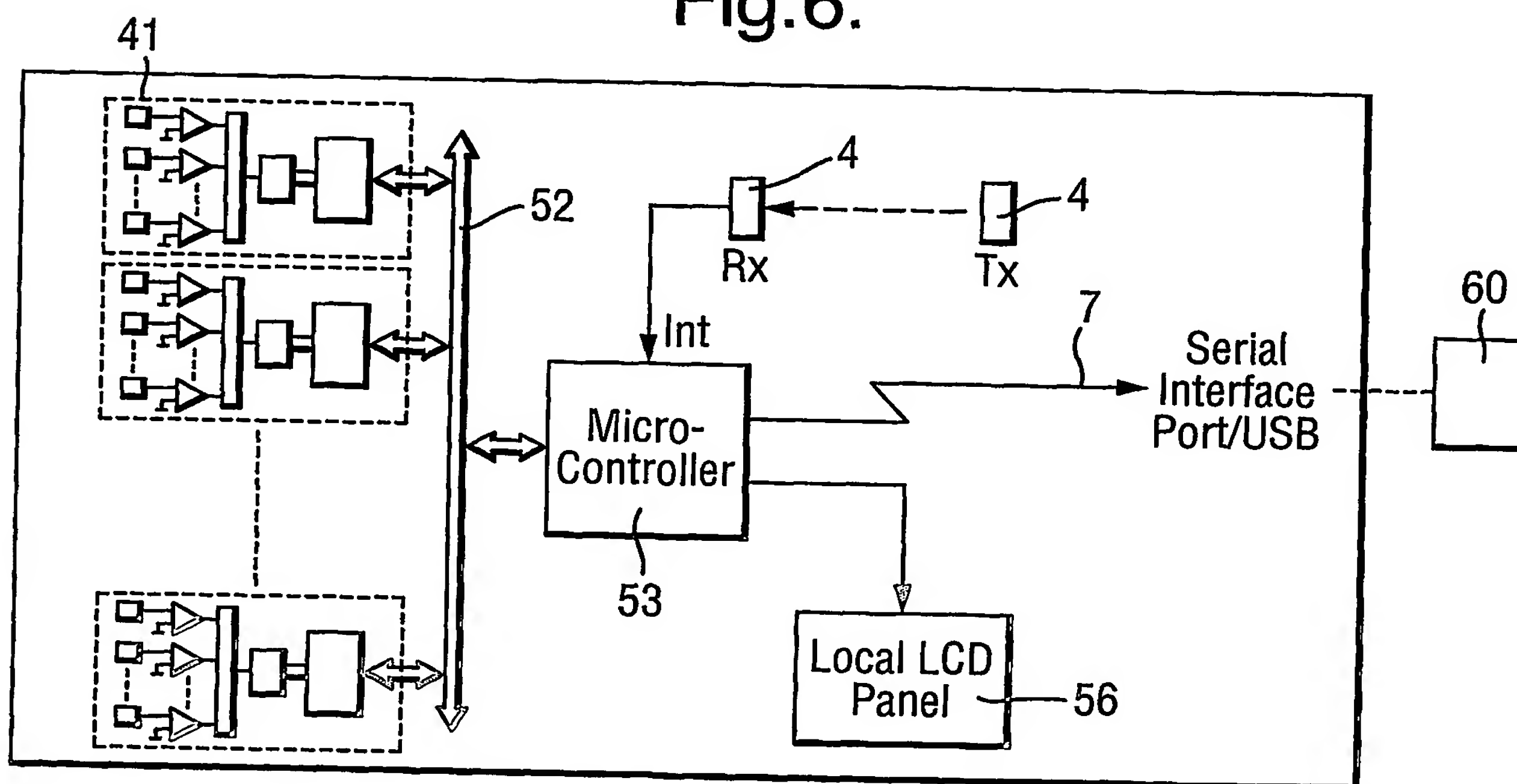


Fig.7.

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PROTOCOL WINDOW

IDENTIFIER

DATE/TIME

PADDING

THUMP #

COMMENTS

“Default Information”-
can be filled in before or
at any time (remains in
memory), if not
completed, then will pop
up when saving with the
below Mandatory fields

FEEDBACK FROM ‘THUMPER’

HIT AS INTENDED ?

FELT
PHYSIOLOGICAL ?
agree disagree

Can be turned off for ‘testing’

based on threshold
entered in set-up window

“Mandatory fields”-to
pop up for completion
when saving

Fig.7(Cont.A)

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SET-UP WINDOW

<div style="display: flex; justify-content: space-between; align-items: center;">PADDING<div style="display: flex; gap: 10px;">ABC</div></div>		<div style="border: 1px solid black; padding: 5px; width: 100%;">“Calibration”-for calibration of the three different layers of padding</div>
<div style="display: flex; justify-content: space-between;"><div style="width: 45%; padding: 5px;"><div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">MAX FORCE ALLOWABLE IN DUTER CIRCLE (rows A and H/columns 1 and D)</div><div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div><div style="display: flex; align-items: center;"><div style="border: 1px solid black; width: 40px; height: 20px; margin-right: 5px;"></div><div>% OF F_{xxx}</div></div></div><div style="width: 50%; padding: 5px;"><div style="border: 1px solid black; padding: 5px; margin-bottom: 5px;">EXCLUDE SENSORS</div><div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 5px;"></div></div></div>		

*if max force is exceeded in the
outer circle, (or in any inputted
sensor from column2), ‘void’
will show on real-time display
(next page)

“Threshold Details”-
(% of F_{max}) for exclusion
of off-centre thumps, and
a sensor exclusion input
area for over-riding other
sensors

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Fig.7.(Cont.B)

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"Sensor Number"-
letter and number, to be
determined by 'clicking'
on a sensor square

REAL-TIME DISPLAY

Based on threshold data,
(see * on previous page)

OK VOID

"Summary window"-
summary of ALL
sensors

All	F_{max}	<input type="text"/>	dF/dt_{max}	<input type="text"/>
	T_{Fmax}	<input type="text"/>	$-dF/dt_{max}$	<input type="text"/>
	$T_{90\%relax}$	<input type="text"/>		
Sensor	F_{max}	<input type="text"/>	dF/dt_{max}	<input type="text"/>
D6	T_{Fmax}	<input type="text"/>	$-dF/dt_{max}$	<input type="text"/>
	$T_{90\%relax}$	<input type="text"/>		

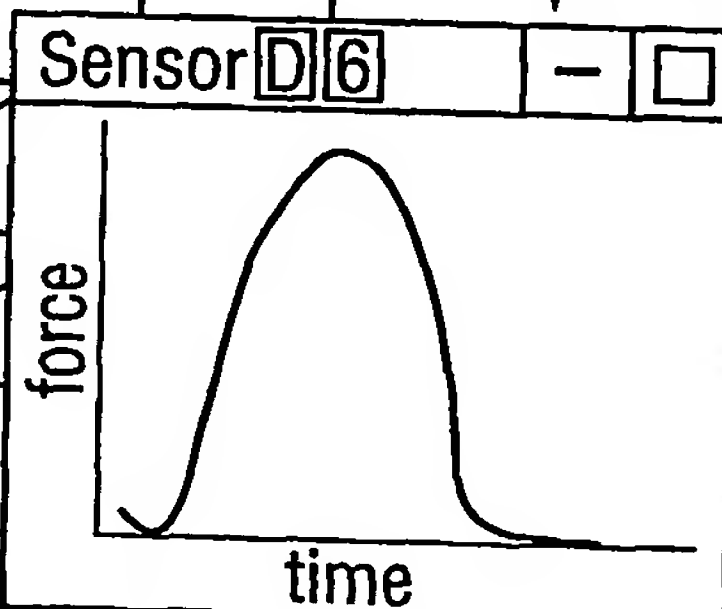
"Data window"-for
individual (selected)
sensors

SEE BELOW KEY FOR EXPLANATION OF ABOVE PARAMETERS

	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								
F								
G								
H								

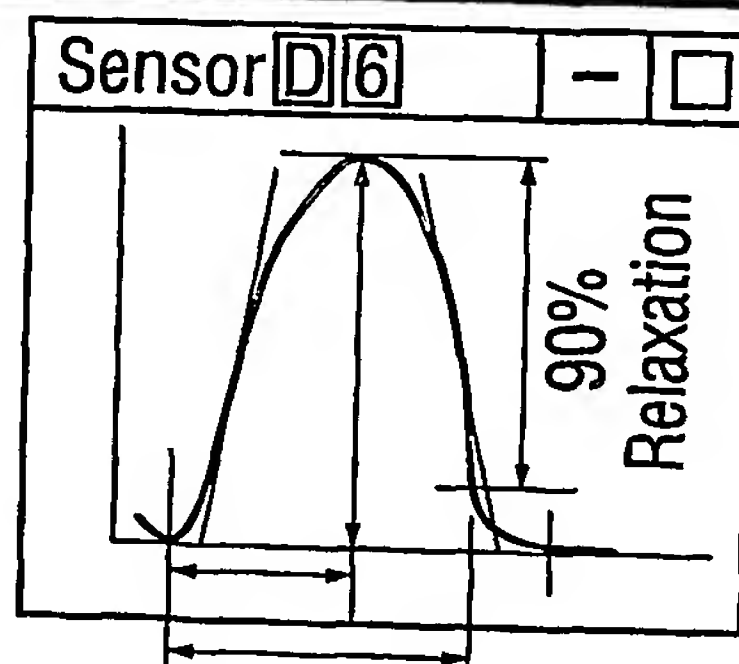
thumbnail

full screen



Each individual
sensor square can
be 'clicked on' for
this view, or the
right top icon goes
to full screen

Each square shows
output for each
individual sensor
(see examples)

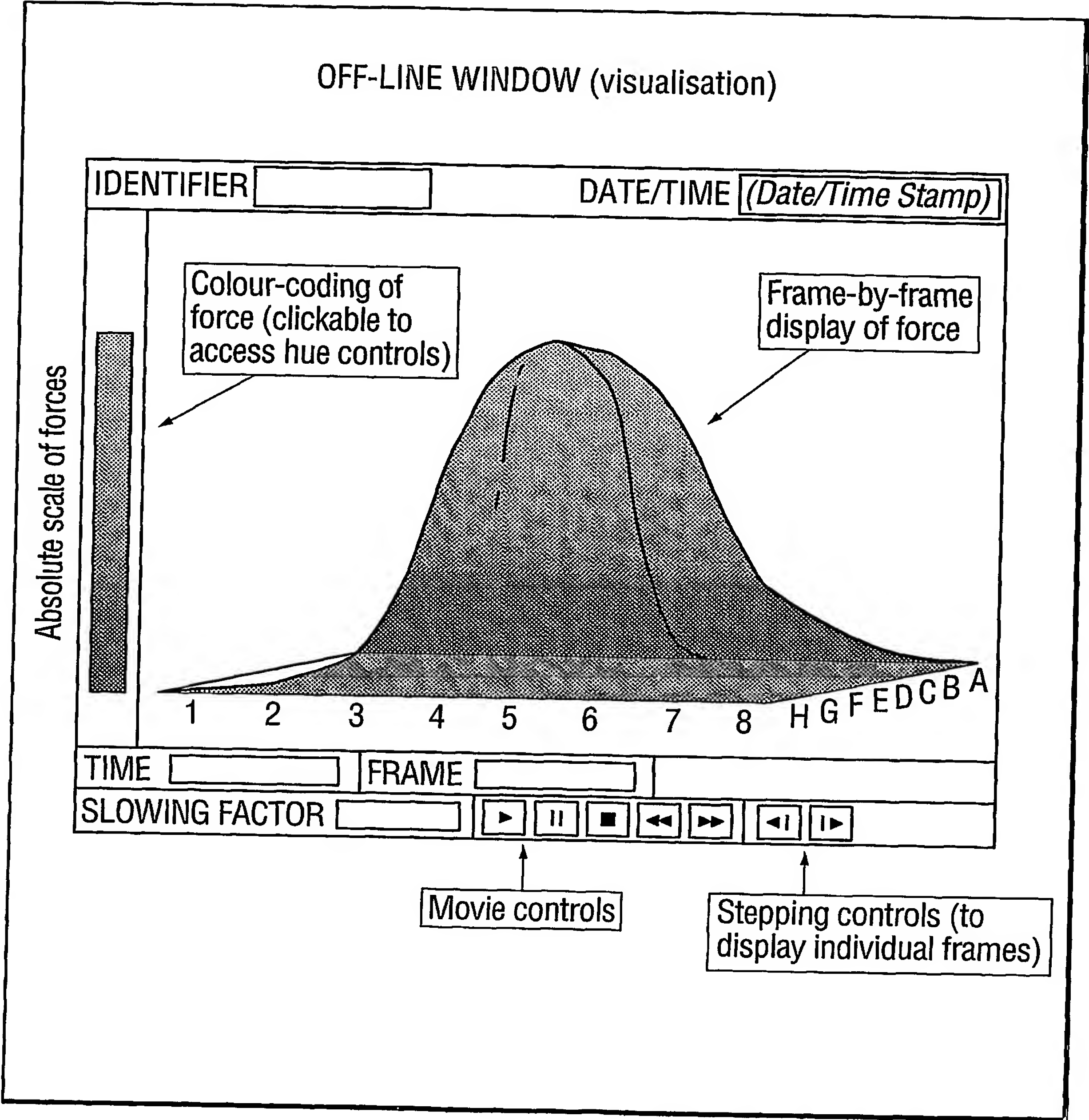
EXPLANATION OF
ABOVE PARAMETERS

KEY

F_{max}
 T_{Fmax}
 $T_{90\%relax}$
 $(dF/dt)_{max}$
 $-(dF/dt)_{max}$

Fig.7(Cont.C)

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Fig.8.

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Path

Loop

of Samples Sampling Rate (KHz)

time limit

Force [N]

Time [s]

0.02495

Work

Displacement

Max

t max

fall time

VO (m/s)

Fmax

Sum

VO_Average threshold Spring Constant (N/mm)

Input Channel digital channel line

Trigger

reset line